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AD-A197 914

The Enlistment Decision: A selected, Annotated Bibliography

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and Jan F. Celeste**

Westat, Inc.

for

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U. S. Army

Research Institute for the Behavioral and Social Sciences

July 1988

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NTIS CRA&I	<input checked="checked" type="checkbox"/>
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A-1	

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ADA197914

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
1a. REPORT SECURITY CLASSIFICATION Unclassified			1b. RESTRICTIVE MARKINGS --		
2a. SECURITY CLASSIFICATION AUTHORITY --			3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution unlimited.		
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE --					
4. PERFORMING ORGANIZATION REPORT NUMBER(S) --			5. MONITORING ORGANIZATION REPORT NUMBER(S) ARI Research Note 88-65		
6a. NAME OF PERFORMING ORGANIZATION Westat, Inc.		6b. OFFICE SYMBOL (if applicable) --	7a. NAME OF MONITORING ORGANIZATION U.S. Army Research Institute		
6c. ADDRESS (City, State, and ZIP Code) 1650 Research Boulevard. Rockville, MD 20850			7b. ADDRESS (City, State, and ZIP Code) 5001 Eisenhower Avenue Alexandria, VA 22333-5600		
8a. NAME OF FUNDING/SPONSORING ORGANIZATION See 7a.		8b. OFFICE SYMBOL (if applicable) --	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER DAAL03-86-D-0001, DO No. 0077, 24 Sept. 86		
8c. ADDRESS (City, State, and ZIP Code) See 7b.			10. SOURCE OF FUNDING NUMBERS		
			PROGRAM ELEMENT NO. 6.27.22	PROJECT NO. 2Q1627 22A791	TASK NO 2.2.2
11. TITLE (Include Security Classification) THE ARMY ENLISTMENT DECISION: A SELECTED ANNOTATED BIBLIOGRAPHY					
12. PERSONAL AUTHOR(S) Michael J. Wilson, Nancy L. Gay, Bruce F. Allen, and Jan F. Celeste					
13a. TYPE OF REPORT Final Report		13b. TIME COVERED FROM 1-1975 to 1-86		14. DATE OF REPORT (Year, Month, Day) Jul 1988	
15. PAGE COUNT 112					
16. SUPPLEMENTARY NOTATION Task performed under scientific services agreement between U.S. Army Research Office and Battelle Columbus Laboratories. Timothy W. Elig, contracting officer's representative					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP	Enlistment Motivation Research, Bibliography, Enlistment Decision, Army personnel recruiting.		
19. ABSTRACT (Continue on reverse if necessary and identify by block number) This research note consists of an annotated bibliography describing Army enlistment decision research. The bibliography summarizes research undertaken from both the marketplace (economic) and motivational (sociological and psychological perspectives). The research reports and articles consistently identify pecuniary and nonpecuniary factors influencing enlistments. The bibliography was compiled using input from both automated literature searches and experts in the field of enlistment decision research. Keywords:					
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION Unclassified		
22a. NAME OF RESPONSIBLE INDIVIDUAL Timothy W. Elig			22b. TELEPHONE (Include Area Code) 202/274-5610		22c. OFFICE SYMBOL PER1-RG

THE ARMY ENLISTMENT DECISION: A SELECTED ANNOTATED BIBLIOGRAPHY

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AN ANNOTATED BIBLIOGRAPHY OF RESEARCH
ON ENLISTMENT DECISION MAKING

Introduction

Since the introduction of the All-volunteer Force (AVF) in 1973, the enlistment decisions of American youth have become the object of increasing interest to military manpower planners and recruiting commands. With military recruitment competing for personnel alongside civilian educational and career options, the military has commissioned numerous studies of the motivations leading to and factors influencing the military enlistment decision.

In response to the need for specific, empirical information regarding the enlistment decision, two distinct research traditions have evolved. These are labeled in this report the enlistment "marketplace" and enlistment "motivation" research traditions. Marketplace research, as characterized here, is primarily economic in orientation. It studies the effects of supply and demand factors on aggregate enlistments. Motivational research, in contrast, focuses on the stated motivations of individuals to consider military enlistment.

Following the perspective adopted and recommendations made by the Gates Commission, the military services have primarily offered pecuniary enlistment incentives such as pay comparable to civilian wages, cash enlistment bonuses, and money for education. In support of these efforts, a large body of research has emerged studying the effects of manpower supply and demand factors upon aggregate enlistments. This research has largely focused on the effects of unemployment, military/civilian pay ratios, pecuniary enlistment incentives, and recruiting resources on aggregate enlistments. As noted above, we characterize this tradition as a marketplace perspective. Military recruiting from the manpower marketplace perspective explicitly views individuals as rational actors actively assessing probable returns from alternative career choices and choosing that option offering the highest aggregate return.

Even as the Gates Commission released its initial findings, though, a number of military personnel and manpower researchers raised objections to what they viewed as an overly economic emphasis in evaluating the prospects of the AVF. A purely economic analysis, it was contended, failed to take into account unique features of military institutions and service that remove them, in certain respects, from strict competition with the civilian labor market. Duty to country and patriotism, adventure and challenge, and a place to mature, all continue to be reasons for enlistment. The motivational perspective is oriented toward the description of reasons (especially nonpecuniary) leading to enlistment rather than testing hypotheses regarding the effects of extra-individual factors on aggregate enlistments.

To date there has been little dialog between or integration of these research traditions. While marketplace analysts have incorporated various nonmarket factors into their models at times, and motivational researchers have repeatedly identified a number of pecuniary reasons for enlisting, it still remains the case that these research traditions are largely isolated from one another. This document constitutes a first step toward the simultaneous consideration of both traditions.

Background and Methods

Background

Army enlistment research is diverse. The studies annotated here range widely from those providing demographic projections of population trends, forecasts of aggregate enlistments, and summaries of the patriotic motivations of young Army recruits and high school seniors. If grouped by research tradition, however, most all of the diversity observed is that between groups. Within groups or traditions the reports display a relative homogeneity with regard to data sources, level of aggregation, variables used, analysis techniques, and findings.

Despite the extensive body of work in each research tradition and the fact that each, ostensibly, studies the same phenomenon (enlistment decisions), there is at present little dialog or integration across the marketplace and motivational perspectives. There exist, however, a number of good reasons for this relative isolation. One relates to the data considered by each tradition. Marketplace analysts generally consider aggregate behavior, while analysts adopting a motivational perspective most often utilize individual-level survey data. In this respect, most studies are simply incommensurable as comprehensive cross-level enlistment decision theories have yet to be developed.

A second characteristic separating these traditions are the different roles theory plays in each. Not only are different variables and constructs stressed (i.e., economic versus sociological and psychological variables and constructs), styles of empirical research differ markedly. Marketplace researchers use theory as a guide to equation specification and hypothesis testing. In contrast, motivational researchers use a consciously exploratory approach. Reports in this tradition focus on description rather than hypothesis tests or statistical modeling.

Finally, differences in the end use of research products reenforces a distinction in research questions and methodology. Army manpower planners, for example, require estimates of the supply of new recruits and factors most directly affecting supply; recruiters, on the other hand, need to know what appeals motivate the enlistment of individuals.

Methods

Preparation of this document required the completion of two important subtasks prior to annotation. These subtasks were: (1) development of the bibliography and (2) establishment of an annotation format. Each task involved several iterations of preparation and review before final decisions were reached regarding the scope and format of this document. A brief description of the steps taken in each subtask is provided below.

Selection and Assembly of the Bibliography. Selection of the bibliography followed a four step process. First, prior experience in and familiarity with the area of enlistment decision research allowed the project director to assemble a partial list of relevant literature. Next, automated document searches were performed using the DIALOG Information Retrieval Service Document service. Using key word searches through both titles and abstracts of its extensive database, DIALOG considerably expanded the range of published enlistment decision material to consider.

Once a preliminary bibliography was assembled using familiarity and automated search methods, it was conveyed to the project COR for review and comment. The COR, in turn, solicited comments and suggestions from a variety of reviewers. Once these additional reviews were obtained, the COR collated these comments (along with his own), and communicated the expanded bibliography to project staff.

The assembly and final selection of articles and research reports constituted the fourth step in the development of the bibliography annotated here. Published articles were quickly obtained using established channels of transmission. Unpublished research reports and working papers were secured by contacting either the author(s) or the responsible institution or agency. Once obtained, all materials were reviewed for appropriateness. A small number of articles and reports were excluded as either inappropriate based on subject matter (e.g., a technical note on the construction of a variable for an enlistment decision equation) or format (e.g., notes taken at a briefing discussing the enlistment decision data sources).

By systematically incorporating automated searches of published articles and consultation with researchers in the areas of military manpower and personnel issues, we believe a representative collection of research articles has been assembled for this annotation. Though the annotations are by no means comprehensive, the input of researchers in both the marketplace and motivational traditions assures a representative listing from each.

Annotation Format. Several reporting formats were evaluated during the course of reviewing documents. The format used in this report was chosen by considering report/article substantive diversity and the function this document is to serve. As a reference document, this report must present annotations in a clear and concise manner. As source material allowing the drawing of comparisons across research reports, material must be presented similarly regardless of particular report style.

These considerations led (in consultation with the COR) to adoption of an outline format for the presentation of annotations. Table 1 presents the format adopted.

Table 1 Annotated Bibliography: Topic Headings for Outline Format

Bibliographic Citation
Research Purpose
Approach
Data
Sample/Time Period
Variables
Analysis
Findings

This format is very general and flexible, capable of accommodating a wide range of research report styles. It begins with the bibliographic citation. The second major heading presents the stated purpose of the research article. Purpose, in these articles and research reports range from forecasting the quantitative impact of negative demographic trends on Army enlistments to the presentation of a literature review on psychological theories of decision making.

In describing research approach, primary emphasis is placed on the data analyzed. Though in some cases this emphasis fails to adequately summarize particularly creative analyses or equation specifications, focusing on the data provides a relevant and convenient basis for comparing research studies. Motivational studies, for example, primarily utilize sample survey data. As a result, their Approach sections summarize information contained in the article/report regarding the sample(s) and the variables. Marketplace research, by contrast, most often analyzes aggregate-level time series data. Consequently, the Approach section for these articles identifies data sources and the time periods covered as well as the variables analyzed. Finally, the last heading summarizes the major results stressed in each article/report.

Results

This section summarizes major findings. No detailed analysis of specific findings, methodologies used, or the relative merits of the two research traditions is offered. This section is intended solely as a guide for the reader's review of annotations.

Marketplace Studies

As noted above, the majority of marketplace studies reviewed rely on aggregate time series data. These data are most often obtained from the Defense Manpower Data Center (DMDC), Bureau of Labor Statistics (BLS), and the Bureau of the Census. Focusing largely on supply and demand factors influencing aggregate enlistments or enlistment contracts, consistent evidence is found that unemployment rates positively affect enlistment.

Much of the evidence regarding the effects military/civilian pay ratios, however, is mixed. In some studies no significant effect is found, in others the estimated coefficient has the wrong sign, and in still others findings confirm theoretical expectations. Much the same mixture of findings was obtained for demand factors such as expenditure of recruiting resources and advertising. In the latter case, however, researchers generally acknowledged difficulties in measuring demand factors. One of the more successful measurements utilized dummy variables to capture the effects of significant changes in recruiting policy (see Dale and Gilroy, 1984).

Marketplace studies also evaluate the changing structure of enlistment supply in future years. Economic and demographic projections predict several conditions that could adversely affect enlistment supply. First, the aggregate pool of youth 17 to 21 years of age will decline steadily in the near future. This, in turn, is expected to result in a rise in average wage at the lower end of the income ladder. Combined with these factors, unemployment is not expected to rise appreciably (and may even fall lower than current levels). Each of these trends indicate increasing labor supply competition in coming years. It is possible, however, that observed increases in retention rates and expected changes in overall force structure may reduce aggregate enlistment demand to a level which will mitigate against the increased competition expected.

Motivational Studies

In contrast to the majority of marketplace analyses, motivational research utilizes the social survey as its predominant source of information. In the reports and articles reviewed here, a wide variety of populations are surveyed including high school seniors, new Army recruits, military personnel, and the general population of American youth. Even with this diversity of surveyed populations, the data analyzed remains generally comparable across

studies. The plans and expectations of respondents regarding their careers and educational aspirations, evaluations of reasons for enlistment and enlistment incentives, and the influence of significant others on career decisions are most often described.

As expected, these studies consistently find enlistment motivations are not purely economic in character. While of differing strength in different studies, patriotism, family tradition, challenge, duty to one's country, and the chance to better oneself are all found to be reasons for considering Army enlistment.

When the ensemble of enlistment reasons are factor analyzed, results again remain relatively stable. In each study nonpecuniary underlying factors emerge. Just as consistently, though, factors economic in character also appear. Unemployment, training for civilian employment, and enlistment bonuses all consistently enter into the enlistment motivations of youth.

Annotations

Marketplace Studies

Binkin, M., (1975). The military pay muddle. Washington, DC: The Brookings Institution.

Research Purpose:

- o Evaluate the structure of the military pay system and common misconceptions about the system
- o Provide recommendations for reform and streamlining of system

Approach:

Data

- pay and compensation information from:
 - Department of Defense (DoD)
 - Senate Appropriations Committee reports
 - Presidential budgets
 - General Accounting Office
 - Congressional Budget Office
 - various published reports

Variables (historical series and projections)

- regular military compensation (RMC)
- cash quarters allowance
- cash incentives and bonuses
- annual cost of retirement
- monetary estimates of health, legal, social security, and survivor benefits

Analysis

- Findings:
- frequencies, tabulations, cost projections
 - o Military members underestimate their compensation
 - o Military pay system to become more costly in future
 - principal fringe benefits (retirement and health care) expected to consume higher proportion of total manpower costs
 - o Present pay system devised for earlier time - it is a costly anachronism

Recommendations:

- o Military pay should be more visible and understandable to personnel
- o Pay differentials based on dependency status or availability should be abolished
- o Inequities and perverse incentives of retirement system should be removed

Brown, G. (1985). Military enlistments: What can we learn from geographic variations? American economic review, Vol. 75, No. 1, 228-234.

Research Purpose:

- o Estimate enlistment contracts of high-quality, non-prior service males using an alternative model of pooling cross-section data over the all volunteer period. Model hopes to avoid problems of previous studies:
 - cross-sectional data
 - provides variation in unemployment rates across U.S.
 - provides variation in civilian earnings across U.S.
 - pooling: Allows state-specific dummy variables. Provides some variation in military compensation.

Approach:

Data:

- published research reports
- Defense Manpower Data Center (DMDG)
- Bureau of the Census - Current Population Reports
- Bureau of Labor Statistics

Time Period

- quarterly data from 1975:4 through 1982:3
(Avoids effects of draft and Vietnam War as data 1975 and after)

Variables

- ratio of enlistment contracts to enlistment-age population
- educational/AFQT characteristics
- military compensation
- civilian wages

- unemployment rates.

Analysis

- log-linear OLS and GLS/which corrects for 1st order serial correlation; separate analyses for I-IIIA HS grads, all I-IIIA, all HS grads; all enlistees.

Findings:

- o Unemployment rates had strong effects on recruitment success.
- o For I-IIIA analyses, elasticity of contract signed with unemployment rate ranged from 0.4 to 0.8.
- o For I-IIIA analyses, elasticity of contract signed with military compensation centered roughly on 1.0.
- o For all enlistees and all HS grads, compensation elasticity could not be estimated with confidence--possibly because these enlistments are demand constrained, not supply determined.
- o During sample period, MW replaced S as dominant per capita supply of recruits to volunteer Army.
- o Educational benefits more significant than pay.

Cooper, R. V. L. (1977). Military manpower and the all-volunteer force.
Santa Monica, CA: Rand.

Research Purpose:

- o Facilitate development of broad strategies and specific solutions for dealing with present and future military manpower problems
- o Investigate the effects of the removal of conscription on the maintenance of a viable national defense
- o Determine the broader social implications of voluntary manpower procurement

Approach:

Data

- DoD manpower statistics
- US Budget estimates
- Gates Commission findings
- Rand reports

Variables (historical series)

- force strengths
- DoD capital stocks
- distribution of force by occupational area
- manpower budget expenditures
- retirement costs
- defense spending
- conscription tax estimates
- military and civilian pay indexes
- total enlistments and objectives
- attrition

- demographic composition of force

Analysis

- supply model - logistic regression
- demand model - linear regression

Findings:

- o The draft and its removal were an integral part of US economic and social policy
- o The AVF has drawn a socially representative mix (in terms of quality and quantity) at a cost less than initially expected
- o The key AVF issue is not manpower supply but enlisted accession requirements now and in the future
 - present policy presents too strict requirements on educational attainment and AFQT level
 - if accession supply were opened up, then should expect lower turnover that will in turn help allocation of manpower
- o The recent increase in defense manpower costs is not all due to the AVF - the costs are largely due to changes in the retirement system instituted 25 years ago - they are only now being paid for - the other major cost increase has been from increasing the compensation of first termers
- o Removal of the draft necessitates changes in manpower management - management must now be more responsive to labor and other considerations - this not needed or done before
 - consider used of civilians to take some jobs
 - rethink force mix - fewer careerists
 - up or out may not be good - technical specialists might be best left in place
- o The retirement system is an archaic hold-over from the draft era

Dale, C. (1984). Army recruiting in a turbulent labor market. In Proceeding of the Industrial Relations Research Association. Dallas, TX, 295-301.

Research Purpose:

- o Predicting the impact of future economic changes on Army recruiting.

Approach:

Data Sources

- published research reports.
- Congressional Budget Office projections.

Time Period

- unemployment and contracts- 1975-1984.
- projections - 1984-1990's.

Variables

- unemployment
- population totals
- Army Force Requirements
- index of recruiting difficulty
- DEP and contract production.

Analysis

- tabular and graphic presentation of projections.

Findings:

- o There is a close correlation between unemployment rates and Army enlistments of high quality males.
- o The youth population will decline sharply over the next decade.
- o Labor force supply may vary erratically according to initial conditions.

- o The most prudent course for the Army is to maintain pay comparability and allocate adequate resources to recruiting.

Dale, C. & Gilroy, C. (1985). Enlistments in the all-volunteer force: note.
The American economic review, Vol. 75, No. 3, 547-551.

Research Purpose:

- o Specification of time-series model of the determinants of military personnel supply and prediction of future Army enlistments of prior service male high school students.
- o Comparison of their results with 1980 results found by Colin Ash, Bernard Udis, and Robert McNown who used a different set of estimating equations.

Approach:

Data:

- published research reports
- Defense Manpower Data Center (DMDC)
- U.S. Bureau of Labor Statistics

Time Period:

- Oct. 1975 through March 1982 - 78 monthly time periods.

Variables:

- enlistment contracts.
- male teenage unemployment rate.
- ratio of military to civilian earning.
- educational benefits.
- recruiter effort

Analysis

- time series, GLS regression with lagged relative pay rate term and 4 mo. lead on pay variable (better fit than 3 or 5 mo. lead).

Findings

- o Comparison to Ash, Udis, McNown (A-U-M) model:

- used contracts rather than accessions and covered period of all volunteer force rather than draft. Used monthly data on male H.S. grads rather than semi-annual data on all American males. Added educational benefit variables.
- while A-U-M found that seasonal patterns predominated, D-G found a correlation between unemployment and contracts signed. The D-G model captured the supply response to the switch from G.I. bill to VEAP, while A-U-M did not.

o Overall

- expected economic supply responses of:
 - Large, stat. significant unemployment term (insignificant for accessions)
 - Significant response to switch from G.I. Bill to VEAP (A-U-M wrong sign)
 - Significant ed. vars.
 - Significant relative pay
 - Pay elasticity: 3.9
 - Unemployment elasticity: 0.81

o Forecast

- overall trend in Army enlistments is downward, largely due to declining youth population and projections of decreasing unemployment rates.

Dale, C., & Gilroy, C. (1983). The economic determinants of military enlistment rates. ARI technical report 587, Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Research Purpose:

- o Measure the effects of the business cycle on enlistment of non-prior service HS graduates and forecast future enlistment rates under alternative economic scenarios. (Extension of research presented in 1983 Atlantic Economic Journal)

Approach:

Data

- monthly data for period of October 1975 to March 1982.

Sample

- non-prior service high school grads and male population of 16-19.

Variables

- dependent - Ratio of accessions plus DEP of male (female) NPS high school grads to male (female) population of 16-19 year olds (OR) accessions plus DEP of male mental category I-III A NPS HS grads to male population of 16-19 year olds.
- unemployment rate of all males 16-19 years old.
- above rate lagged 2 months (unique to this study).
- above rate lagged 4 months (unique to this study).
- ratio of 1st year military BMC to average civilian weekly earnings, with a 4 month lead (unique to this study)
- GI Bill dummy.
- undeflated value used for mental category equations dropped for maximum monthly GI Bill benefits deflated by consumer price index.

- undeflated value used for mental category equations dropped for maximum monthly VEAP benefits deflated by consumer price index.
- undeflated value used for mental category equations dropped for maximum value of kicker payments.
- binary variable for period Nov 79-Aug 81 when HS grads were especially targeted (unique to this study) - captures recruiter effort.
- seasonal dummy.
- number of production recruiters.

Analysis

- for model multiple GLS regression - macroeconomic time-series, correcting for presence of first-order autocorrelation with Cochrane-Orcutt method.
- separate equations estimated for Army, Navy, Air Force and Marines (for comparison purposes).
- separate equation estimate for females.
- separate equation estimate for mental category groups.
- for simulation forecasting - OLS regression of 16-19 year olds, jobless rate on aggregate rate with 3 seasonal dummies.

Findings:

- o Rise in unemployment rate has led to substantial increase in Army enlistments of male, NPS HS grads--a 1% decrease in unemployment rate could cause an 8.8% (or approx 7,000) increase in enlistment.
- o Pay elasticity ranges between 1.2 to 2.3 for all enlistees models and 0.9 to 1.7 for mental category models.
- o Increased targeting of HS grads by recruiter significantly increases the total number of enlistees.
- o Educational variables were all statistically significant.

Dale, C., & Gilroy, C. (1984). Determinants of enlistments: a macroeconomic time series view. Armed forces and society, Vol. 10, No. 2, Winter 1984, 192-210.

Research Purpose:

- o To examine and quantify the effects of the business cycle and other factors on enlistments of NPS high school graduates.

Approach:

Data

- monthly Army data from Oct. 1975 to March 1982.

Sample

- non-prior service high school grads and male population of 16-19.

Variables

- ratio of accessions plus DEP of male (female) NPS high school grads to male (female) population of 16-19 year olds
- accessions plus DEP of male mental category I-III A NPS HS grads to male population of 16-19 year olds. (Inclusion of DEP unique to this study.)
- Unemployment rate of all males 16-19 years old.
- Above rate lagged 2 months (unique to this study).
- Above rate lagged 4 months (unique to this study).
- Ratio of 1st year military BMC to average civilian weekly earnings, with a 4 month lead (unique to this study)
- GI Bill dummy.
- Uninflated value used for mental category equations dropped for maximum monthly GI Bill benefits deflated by consumer price index.

- Undeclared value used for mental category equations dropped for maximum monthly VEAP benefits deflated by consumer price index.
- Undeclared value used for mental category equations dropped for maximum value of kicker payments deflated by consumer price index.
- Binary variable for period Nov 79-Aug 81 when HS grads were especially targeted (unique to this study) - captures recruiter effort.
- Seasonal dummy.
- Number of production recruiters.

Analysis

- For model multiple GLS regression, macroeconomic time-series, correcting for presence of first-order autocorrelation with Cochrane-Orcutt method.
- Separate equations estimated for Army, Navy, Air Force and Marines (for comparison purposes).
- Separate equation estimate for females.
- Separate equation estimate for mental category groups.
- For simulation forecasting - OLS regression of 16-19 year olds, jobless rate on aggregate rate with 3 seasonal dummies.

Findings:

- Rise in unemployment rate has led to substantial increase in Army enlistments of male, NPS HS grads--a 1% decrease in unemployment rate could cause an 8.8% (or approx 7,000) decrease in enlistment.
- Pay elasticity ranges between 1.2 to 2.3 for all enlistees models and 0.9 to 1.7 for mental category models.
- Increased targeting of HS grads by recruiter significantly increases the total number of enlistees.
- Educational variables were all statistically significant.

Dale, C. & Gilroy, C. (1985). The outlook for Army recruiting. Eastern economic review, Vol. 11, No. 2, 107-122.

Research Purpose:

- o Extension of previous work on effects of business cycle on Army enlistments to include updated results for enlistments by mental category.
- o Specifies a revised macro-economic time series enlistment model, compares results to previous work and provides projections of future Army enlistment rates under alternative economic scenarios.

Approach:

Data Source

- Defense Manpower Data Center
- Bureau of Labor Statistics

Time Period

- October 1975 through September 1983 - 96 months

Variables

- demographic characteristics
- ratio of enlistment contracts to population of eligible 16 to 19 year olds.
- unemployment rate of all 16-19-year old males
- weighted age of 1st 2 years of basic mil. compensation with 4 months lead
- maximum value of enlistment bonuses
- maximum monthly GI Bill benefits
- maximum value of VEAP plus kicker benefits
- seasonal dummy
- GI availability dummy

- binary variable to account for periods of special recruiting efforts
- number of recruiters

Analysis

- linear functional form using generalized least squares, correcting for presence of 1st order autocorrelations with the Cochrane-Orcutt method.

Findings:

- o Unemployment elasticity for all males estimated to be .81.
- o All compensation variables had correct sign with educational benefits and bonuses being statistically significant.

Daula, T. V. & Smith, D. A. (1986). Recruiting goals, enlistment supply, and enlistments in the U.S. Army. In C. L. Gilroy (Ed.), Army manpower economics. Boulder: Westview Press, Inc.

Research Purpose:

- o To present theoretical and empirical evidence that the statistical consistency of structural parameters requires more sophisticated estimation techniques than are presently being used and to argue for the inclusion of demand-side constraints
- o To include the effects of service competition for high quality youth in enlistment modeling

Approach:

Data

- time series cross sectional data aggregated at recruiting district level
- supply constrained sample (when enlistments less than quotas) N = 376
- demand constrained sample (when enlistments greater than or equal to quota) N = 1406

Time period

- monthly data from October 1980 through June 1983

Variables

- Mills ratio
- enlistment quotas
- Army enlistments
- other DoD enlistments
- civilian/military pay
- unemployment rates
- qualified military available (QMA)
- recruiting expenditures

- advertising expenditures
- enlistment incentives
- enlistment bonus experiment cell

Analysis

- separate models (switching regressions) estimated for full sample, supply constrained and demand constrained samples
- variety of specifications estimated - traditional supply model - addition of demand constraints and supply constraints

Findings:

- o Enlistments of groups considered supply constrained may be demand constrained if quotas set too low
- o New policies will affect enlistments as a function of three factors
 - supply elasticity with respect to policy change
 - the weight placed on the enlistment goal in demand constrained situations
 - the proportion of recruiting districts that are supply constrained
- o Single equation enlistment models misspecify the relations between supply and demand factors affecting enlistments

Fechter, A. E. (1978). The supply of enlisted volunteers in the post-draft experiment: An evaluation based on pre-1972 experience. In Defense manpower policy, (R. V. L. Cooper ed.), Santa Monica, CA: Rand Corporation, 87-99.

Research Purpose:

- o To evaluate the validity of the Gates Commission estimates of military pay and unemployment elasticities on enlistment
- o To extend the database used for estimation purposes and evaluate forecasts generated from estimated enlistment supply models

Approach:

Data

- quarterly aggregate data extending from the first quarter of 1958 through the second quarter of 1974 (the Gates Commission data ended in 1967/8)
- data for enlistees in Mental Categories I-III only were analyzed as these individuals were considered to be more likely to be supply-determined
- data from 1958 through the last quarter of 1972 were used to generate parameter estimates
- model forecasts were evaluated using data from the first quarter of 1973 through the second quarter of 1974

Variables

- military pay levels
- civilian pay levels
- military/civilian pay ratios
- enlistment rate
- probability of being drafted
- employment probability of those not enlisting
- an index of conflict in Southeast Asia

- an index of international tension
- seasonal dummy variables

Analysis

- logistic regression was used to estimate parameters in nine models which varied in their measurement of pay variables (actual levels vs relative ratio), assumptions regarding the speed in enlistment supply adjustments (rate lagged one quarter vs rate not included in model), and the use of seasonal adjustments (included vs excluded)
- the nine models were then used to forecast six quarters forward (1:73 - 2:74) and evaluated in terms of their goodness of fit with actual enlistments

Findings:

- o Estimated pay elasticities substantially replicated Gates Commission findings (though somewhat lower in absolute magnitude)
- o Historically (in this time period) military pay elasticities appear to have a downward trend in magnitude
- o Estimated employment elasticities often had the wrong sign and those directionally correct were not often statistically significant
- o The forecasting precision of the models were generally good, though the predictions were systematically high - this was hypothesized as due to either: (1) a reduction in risk associated with the lottery draft, (2) the systematic decline in military pay elasticity, or (3) underestimating the enlistment impact of the draft

Goldberg, L. & Greenston, P. (1986). Economic analysis of Army enlistments: policy implications. In C. L. Gilroy (Ed.), Army manpower economics. Boulder: Westview Press, Inc.

Research Purpose:

- o Provide update on the effect of supply factors on the number of contracts signed in 41 Navy Recruiting Districts (NRD) by non-prior service, male, high school diploma graduates
- o Extension of above analysis by focusing on enlistments at occupational level and explores effects of bonuses among occupations (i.e., do bonuses channel or expand enlistments)

Approach:

Data

- pooled time series cross-sectional data aggregated at Navy Recruiting District level

Time period

- FY 1976 through 1983

Variables

- civilian and military pay
- civilian unemployment
- GI Bill and Army College Fund benefits
- population mix
 - proportion of 17 to 21 year old male high school degree graduates or seniors in an NRD
 - percentage in NRD that are black
 - urban/rural mix in NRD
- policy changes in enlistment standards and enlistment bonuses

Analysis

- linear regression and log-linear modeling - cost-effectiveness analyses

Findings:

- o Factors affecting enlistment are quite similar across services and occupational groups
- o Test of Army forecasting model (for FY 1984) indicates model less accurate for high quality recruits
- o GI Bill is an expensive recruiting tool compared to bonuses and increasing the number of recruiters
- o Bonuses effects are smaller than those for relative pay
- o The effect of bonuses is to channel enlistments into specific occupational groups

Horne, D. K. (1985). Modeling Army enlistment supply for the all-volunteer force. Monthly labor review, Vol. 198, 35-41.

Research Purpose:

- To model the peacetime supply of graduate-senior, mental category I-III A males with no prior service to measure the effects of unemployment and earnings on Army enlistment rate and to generate short-run forecasts.

Approach:

Data Sources

- Bureau of Labor Statistics
- U.S. Army Recruiting Command
- Bureau of the Census - Current Population Reports

Time Period

- 1977 (2nd quarter) through 1984 (2nd quarter) - 29 quarterly periods.

Variables

- ratio of enlistment contracts to eligible male population 16 to 21 years old.
- military compensation relative to civilian earnings
- number of recruiters
- unemployment rate for 16 to 21 years olds.
- Army advertising expenditures

Analysis

- generalized least squares using various two-stage GLS specifications.

Findings:

- o Large, significant earnings effect.
- o Large, significant unemployment effect.
- o Significant recruiter density effect.
- o Significant national advertising expenditure effect.
- o Forecasting accuracy model appears to fit data well over entire period.
- o One-period-ahead forecasts for four quarters of 1984 differ from actual contracts by between 1.5% and 3%.

Horne, D. K. (1985). An economic analysis of Army enlistment supply. ARI technical report 668, Alexandria, VA: Army Research Institute for the Behavioral and Social Sciences.

Research Purpose:

- o Address methodological problems involved in enlistment decision modeling
- o Develop a forecasting model and compare results with previous studies

Approach:

Data

- U.S. Department of Labor publications
- Defense Manpower Data Center contract data
- U.S. Army Recruiting Command advertising and recruiter data

Time period

- quarterly from 1977:2 through 1984:2

Variables

- signed contracts
- civilian/military pay differential
- Army advertising expenditures
- ratio of recruiters to eligible males
- unemployment rate

Analysis

- GLS regression correcting for autocorrelation

Findings:

- o Military pay, unemployment, number of recruiters, and advertising expenditures are all significant determinants of enlistments

Hosek, J. R., Fernandez, R. L., & Grissmer, D. W. (1984). Active enlisted supply: prospects and policy options (P6967). Santa Monica, CA: The Rand Corporation.

Research Purpose:

- o Demonstrate how demographic forces affecting enlistment supply will impact on military enlistment and retention in the 1980's and 1990's
- o Project the effects of first and second term retention on the Army's force structure
- o Evaluate the probable enlistment effects of alternative incentive policies

Approach:

Data

- Rand and other published reports
- Department of Defense Personnel Data
- census Data

Variables (historical series and projections)

- actual and projected youth population
- civilian structure
- civilian unemployment
- military/civilian pay ratios
- aggregate enlistment and retention rates
- Army force structure
- military pay raise scenarios

Analysis

- frequencies, crosstabulations, time series cross sectional forecasting model (not specified)

Findings:

- o Without major changes in present trends Army in the 1990's will have a larger senior force
- o Future accession demands will decline along with the youth population
- o Recruiting in the 1980's will be better than the 1970's
 - 10% pay increase will be needed to offset improving economy and decline in numbers of youth
- o Retention at historically unprecedented rates
 - increasing numbers in senior force
 - planners must concentrate on implications of force mix
- o Enlistment policy options
 - post-service educational benefits - must be carefully structured to remain cost-effective
 - 2 year enlistment option - poor performance
 - enlistment bonus - data not in for evaluation

Hosek, J. R. & Peterson, C. E. (1986). Enlistment decisions of young men. In G. L. Gilroy (Eds.), Army manpower economics. Boulder: Westview Press, Inc.

Research Purpose:

- o Determine whether the recruiting market is homogeneous or segmented
- o Identify the factors affect individual enlistment choices and determine whether they vary by market segments
- o Evaluate predictive ability of individual enlistment decision models among market segments

Approach:

Data

- enlistees - spring wave of the 1979 DoD Survey of Personnel Entering Military Service (1979) AFEES Survey
- civilians - first wave of the National Longitudinal Survey of Labor Force Behavior, Youth Survey (1979 NLS)

Sample

- enlistees - complete enumeration - N = 1419
- civilians - stratified random sample of youth 14 to 22 in 1979 - N = 768
-

Variables

- age when high school senior
- AFQT percentile
- family characteristics
- work history
- educational expectations
- recruiter density

Analysis

- logistic regression

Findings:

- o Enlistment intentions and behaviors vary by market segments (educational groups and educational expectations)
- o Enlistment determinants generally similar across market segments
- o Models successfully discriminate between high and low propensity recruiting prospects
- o Data limitations make test of recruiting density effects impossible

Schmitz, E.J., & Nelson, A. (1984). Modeling the enlistment process for personnel planning. ARI research report 1416. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Research Purpose:

- o To investigate the process of moving from an applicant to an accession to determine the processing flows and time intervals between various decision points of enlistment processing.

Approach:

Data

- Updated monthly transaction counts from applicant data files for FY81 and FY82 were used to produce an annual transaction rate.

Sample

- NPS males.

Variables

- Take Physical
- Fail Physical
- Sign Contract
- DEP Loss
- Mental Category
- Time Between Application and Contract

Findings:

- o Substantial numbers of qualified individuals were being lost in the enlistment process between formal application and contract.
- o The time between application and contract is very short with a median time of seven days, with 14% of the actions processed the same day.

- o Groups differed substantially in their contract probabilities by education, AFQT category, and race.
- o Total applicants declined between FY81 and FY82.
- o Contract probabilities have increased more for non-whites than whites, controlling for other factors.

Shavelson, R. J., Haggstrom, G. W., & Blaschke, T. J. (1984). Two-year college and vocational schools as sources of military manpower (N-2193-MIL). Santa Monica, CA: The Rand Corporation.

Research Purpose:

- o Evaluate the recruiting potential of 2-year colleges and post-secondary vocational schools
- o Determine number of high quality individuals in 2-year colleges and vocational schools

Approach:

Data

- published data from National Center for Educational Statistics (NCES)
- enlistment and personnel records from Defense Manpower Data Center (DMDC)

Variables

- school enrollments
- school funding sources
- demographic characteristics of freshmen
 - age
 - prior military service
 - physical/mental disability
- educational characteristics of freshmen
 - high school diploma
 - grades
- regional recruiting efforts
- regional enlistments

Analysis

- in-depth interviews, frequencies, crosstabulations, logistic regression

Findings:

- o 2 year schools have a large enough population to warrant recruiting effort (.8 to 1 million in any year)
- o 300,000 students have prior military service
- o Majority of student in high quality group
- o Present recruiting programs not very successful at attracting 2 year students (no hot spots across nation and no profile for successful recruiter)

Thomas, G. (1983). Feasibility of modeling the supply of older age accessions. U.S. Department of Education, NPRDC-TR-83-17.

Research Purpose:

- o To assess the feasibility of modelling the supply of older age (22- to 29-year-old) enlistees including issues of data availability and methodology development.

Approach:

- o A specific model is not tested in this paper. The author examines supply modelling issues by presenting a brief summary of how the issue(s) has been addressed in previous research and sometimes suggests the preferred option for modeling the supply of older-age enlistees as follows:

Data

- Reviews military, civilian, civilian/military data sets which are available, and provide required variable measures.

Sample

- Non-prior service males, prefers recruiting district as basic geographic unit of activity.

Variables

Dependent

- Signed contracts. Should be measured in narrower age cohorts, e.g., 17-20, 21-25, 25+, not 17-29.

Explanatory

- Military Wages - Still open question as to best measure.
- Recruiting Effort - Need to devise other than number of recruiters.
- Advertising - Differential advertising efforts in recruiting districts.
- Unemployment - Age-group-specific unemployment rates within recruiting district.

- Population - partitioned by sex and race for each age cohort group and sizing relevant populations.
- Taste for Military Employment
- Governmental Employment Programs for Civilians
- Educational Finance Assistance
- Post-Service Educational Benefits

Analysis

- Issue of best functional form is not yet resolved, should be separate supply equations for each age cohort group.
- Prefers use of pooled, cross-sectional time series data for econometric estimation.

Findings

- o It is feasible to model supply of 22-29 year old enlistees-- there are ample data available. Modelling could range from aggregate and naive to occupation-specific and policy robust.

Future Research

- o Examination of supply pool not choosing military employment.
- o Analysis of decision context of potential enlistees-- especially age-specific factors.
- o Analysis of interaction of branch-specific policy, goals, recruiters, and enlistments in supply models.
- o Age-specific supply modeling.
- o Development of age-specific wage and employment series for basic geographic unit of activity.
- o Development of age-specific tastes for military employment.

Motivational Studies

Bachman, J. G. (1983). American high school seniors view the military: 1976
- 1982. Armed Forces and Society, Vol. 10, No. 1, 86-104.

Research Purpose:

- o To provide an overview of how high school seniors view the military and how their views have changed from 1976 to 1982.
- o To predict enlistment rates from attitudes regarding the military.

Approach.

Data

- 1976-1982 Monitoring the Future (MTF) Surveys.

Samples

- 1976-1982 MTF - nationally representative samples of high school seniors - sample selection utilized a three-stage probability approach (school, class, student)- sample sizes ranged from 16,662 to 18,924.

Variables

- demographic characteristics.
- plans and preferences for military service.
- views about the military as a work setting.
- views about the military as an institution.
- concern about the risk of war.
- expectations regarding military services.
- evaluations of enlistment incentives.

Analysis

- frequencies, crosstabulations.

Findings:

- o Personal plans and intentions for military service declined during the late seventies and increased during the early eighties.
- o Ratings of the military as a work setting follow the trends for plans and intentions for military service.
- o Views of the military as an institution followed the trends of plans and intentions for military service and ratings of the military as a work setting. Support for military spending was high during the late seventies, and declined as views of the military improved.
- o In general, service preferences and expectations declined in the late seventies and rose in the early eighties.
- o Several Preference/Expectation combinations did not match:
 - among college-bound males, one third of those who preferred to serve expected that they would not serve;
 - among males who expected to serve, 45% failed to express a preference for military service.
- o 95% of high school seniors in the class of 1982 view paid education incentives as a good idea.
- o 37% of males indicated that they probably or definitely would enter the military if paid college were available in return for military service.

Benchhoff, D. L. (1983). Analysis of the recruiting incentives survey.
Carlisle Barracks, PA: U.S. Army War College.

Research Purpose:

- o Determine what high school students felt they would be doing following graduation
- o Evaluate recruiting incentives and feeling toward Army enlistment generally

Approach:

Data

- 1983 Recruiting Incentives Survey

Sample

- national sample of 5651 high school students
- two-stage sampling methodology
 - first stage selected schools
 - second stage selection of students performed by school personnel

Variables

- demographic characteristics
- annual family income
- marital and career plans
- parent's employment and education
- AFQT score
- enlistment intentions
- rankings of incentive packages

Analysis

- frequencies, crosstabulations, magnitude estimation

Findings:

- o Ranking of enlistment incentives
 - high quality youth ranking educational assistance the highest
 - low quality youth preferred work experience and enlistment bonuses over educational assistance
 - both quality groups ranked economic security high
- o College-bound youth more favorable to military service than the work-bound group

Burk, J. S., and Faris, J. H. (1982). The persistence and importance of patriotism in the all-volunteer force (USAREC SR 82-6). Battelle Memorial Institute.

Research Purpose:

- o To examine the frequency with which recruits report patriotism as a reason for enlisting.
- o To examine the social origins of patriotic attitudes.
- o To determine the behavioral consequences of patriotic attitudes.

Approach:

Data

- 1980 National Longitudinal Survey (NLS) of Youth
- 1979 DOD Survey of Personnel Entering Military Service (AFEES)
- 1978 Youth Attitude Tracking Study (YATS)

Samples

- 1980 NLS - Nationally representative sample of 11,406 non-prior service youth between the ages of 14 and 21. Sample of 1280 prior service youth between the ages of 17 and 21.
- 1979 AFEES - Survey responses obtained from 15,219 individuals processed through AFEES between September and November 1979. All survey-eligible processes were given questionnaires to complete.
- 1978 YATS - Sample not discussed.

Variables

- 1980 NLS
 - demographic characteristics
 - reasons for enlisting
 - patriotic motivations

- economic motivations
- family influence
- military/civilian orientations
- satisfaction with military service
- reenlistment plans
- 1979 AFES
 - demographic characteristics
 - family/friend's history of military service
 - reasons for enlisting
 - patriotic motives
 - economic motives
 - family influence

Analysis

- frequencies, crosstabulations, correlations, cluster analysis

Findings:

- o Models of the enlistment decision process underestimate the impact of noneconomic factors.
- o Patriotic motives are the single most important motivation for enlisting in the AVF.
- o The distribution of patriotic attitudes among those serving in the military cuts across all social boundaries.
- o The transmission of patriotic attitudes is linked to interpersonal process of family and friends, varying by historical and cultural context.
- o Those who enlist for patriotic reasons are more likely to serve in areas which are vital to fulfilling the mission of the military.
- o Those who enlist for patriotic reasons are more effective in their military roles.

Chisholm, R. F., Gauntner, D. E. (1980). Pre-enlistment expectations, perceptions of Army life, satisfaction, and reenlistment of volunteers. Journal of Political and Military Sociology, Vol. 8, No. 1.

Research Purpose:

- o What are the factors which lead individuals to enlist in the Army?
- o How well do pre-enlistment expectations and subsequent perceptions of Army life coincide?
- o What is the effect of job preferences and perceived experiences on satisfaction with the military?
- o Does satisfaction effect intention to re-enlist?

Approach:

Data

- 1976 Survey of First-Term Enlisted Army Personnel

Sample

- 609 personnel were selected at three Army installations -- all personnel had between 6 and 18 months of service -- selection procedures were not discussed.

Variables

- demographic characteristics
- preenlistment expectations
- perceptions of Army life
- reasons for enlistment
- reenlistment intentions
- satisfaction with Army life

Analysis

- frequencies, means, regression

Findings:

- o GI Bill benefits and the opportunity for civilian education were the major reasons for joining the Army.
- o Least important reasons for joining the Army were making the Army a career, home problems, and patriotism.
- o Overall, differences are observed between pre-enlistment expectations and subsequent perceptions of Army life.
- o The greatest differences between expectations and subsequent perceptions were in satisfaction with job and satisfaction with duty station.
- o Strong associations do not appear between satisfaction and intentions to re-enlist among those who either will re-enlist or are not sure they will re-enlist. However a strong relationship exists between those who do not intend to re-enlist and job satisfaction.

Cotton, C. (1981). Institutional and occupational values in Canada's Army.
Armed Forces and Society, Vol. 8, No. 1, 99-110.

Research Purpose:

- o Critically examine Moskos' thesis that the military is moving from an institutional focus to an occupational focus.
- o Develop a measure of institutional/occupational focus that can be used in comparative research, the military ethos scale.

Approach:

Data

- 1978/79 Survey of Canadian Army Personnel (SCAP)

Sample

- 1978/79 SCAP -- Surveys administered to 1636 Army personnel -- sampling procedures not discussed.

Variables

- military service characteristics
- military ethos scale (6 items)
- attitudes toward military institutions

Analysis

- means and percentage

Findings:

- o The mean value of the military ethos scale for the Army sample was 17.7 indicating a weak occupational orientation.

- o Substantial variation was found by subgroup, with senior combat officers exhibiting the strongest institutional orientation (25) and junior support troops displaying the strongest occupational orientation (14.2).
- o Seniority, rank, and combat service are all positively related to an institutional view of the military. In general, those in leadership roles are more likely to take the institutional view of the military.
- o When broken into role type ranges (22 or more, soldier; 15 to 22, ambivalent; 14 or less, employee) the scale discriminates well among attitudes. Soldiers are more likely to be supportive of the combat arms and of military traditions, and resistant to women in the military.
- o The military ethos scale displays construct validity and internal consistency.

Elig, T. W., Kass, R. Gade, P. A., and Eaton, N. K. (1981). Demographic similarity of buyers and sellers: Sales productivity of Army recruiters. Paper presented at the American Psychological Association, Los Angeles, CA.

Research Purpose:

- o Investigate the demographic similarity of recruits and recruiters
- o Determine whether recruiting productivity could be explained in terms of either recruiter or recruit demographic characteristics

Approach:

Data

- 1979 archival records of 60 female and 552 male Army recruiters
- personnel records of the 19,154 contracted recruits by the recruiters in FY 79

Variables

- recruiter gender, marital status, ethnic group
- recruit gender, marital status, ethnic group, AFQT category, educational certification

Analysis

- analysis of covariance models were used to investigate three topics
 - demographic characteristics of recruiters and their effect on the total number of NPS individuals recruited
 - examination of the relationship between recruiter characteristics and the characteristics of their recruiting mission
 - examining the demographic similarities of recruiters and their recruits

Findings:

- o A moderate degree of recruiter/recruit similarity may lead to improved recruiter selection criteria
- o A significant interaction exists between age and gender - older females are the most productive recruiters
- o Recruiters with more education tend to produce more high school graduate recruits than less educated recruiters
- o Strong recruiter/recruit similarities exist by ethnicity - none by marital status

Elig, T. W., Johnson, R. M., Gade, P. A., and Hertzbach, A. (1984). The Army enlistment decision: An overview of ARI recruit surveys, 1982 and 1983. ARI-PUTA working paper, 84-12.

Research Purpose:

- o Overview ARI's 1982 and 1983 New Recruit Survey (NRS) results and compare them with 1979 DoD Survey results
- o Emphasis given to enlistment decisions of high quality male non-prior service Regular Army recruits

Approach:

Data

- 1982 and 1983 New Recruit Surveys with comparisons made to the 1979 DoD Survey

Samples

- NRS 1982 - total of 12,000 new Army recruits surveyed at eight Receptions Stations during the early spring and summer months - the analysis presented in this paper considered only non-prior service Regular Army recruits (N = 6318)
- NRS 1983 - total of 15,000 new Army recruits surveyed at eight Reception Stations during the early spring and summer months - the analysis presented in this paper considered only non-prior service Regular Army recruits (N = 8605)

Variables

- AFQT
- ethnic group
- education level
- age
- enlistment term
- media/advertising exposure
- importance of reasons for enlistment
- evaluation of enlistment incentives
 - 2 year term of enlistment

- Army College Fund (ACF)
- educational kickers

Analysis

- crosstabulations and linear projections of strength gains

Findings:

- o Enlistment motivations
 - motivations based on self improvement and skill training decreased from 1979 to 1982 and decreased further from 1982 to 1983
 - motivations based on money for college and a chance to escape unemployment increased from 1979 to 1982
 - enlistment motivations based on the opportunity to earn more income than civilians increased from 1982 to 1983
- o Incentive programs - strength gains
 - 57% of all enlistees with 2 year terms of enlistment would not have joined the Army if this option was not offered (NRS 1983)
 - 34.7% of 1983 enlistees eligible for ACF would not have enlisted if this option was not available
- o Advertising
 - advertising should target specific shows to reach specific audiences
 - college football reaches an audience with a higher than average AFQT

Faris, J. H. (1981). The all-volunteer force: Recruitment from military families. Armed Forces and Society, Vol. 7, No. 4.

Research Purpose:

- o Demonstrate that military recruits exhibit two types of motivation; one stream enters the military because of economic motivations, and the other enters because of family traditions and normative values.

Approach:

Data

- 1972 National Longitudinal Survey (NLS) Youth Sample
- 1976 Department of Defense (DOD) Personnel Survey

Samples

- 1972 NLS - Nationally representative sample of approximately 21,000 high school seniors
- 1976 DOD - Sample not discussed

Variables

- respondent demographic characteristics
- respondent's parents' demographic characteristics
- career plans
- father's military experience

Analysis

- Frequencies, crosstabulations

Findings:

- o The recruitment of enlisted men from military families reflects that military offspring are more likely to enter the military, and they are also more likely to choose the military as their career.
- o Sons of military fathers increase the representativeness of the military in terms of socioeconomic status (SES).
- o Sons of military fathers are more likely to graduate from high school in the top two thirds of their class.
- o Officer recruitment displays similar patterns.
- o Junior officers are drawn disproportionately from sons of long term veterans, sons of officers, and sons of long term officers.

Faris, J. H. (1984). Economic and noneconomic factors of personnel recruitment and retention in the AVF. Armed Forces and Society, Vol. 10, No. 2.

Research Purpose:

- o Expand existing economic models of recruitment and retention to include both market and noneconomic factors.
- o Examine social demographic and organizational practice variables and their interactions to form a comprehensive view of existing and emerging personnel patterns.

Approach:

Data

- numerous published research reports
- 1976 Department of Defense Personnel Survey

Sample

- not discussed

Variables

- demographic characteristics
- military/civilian job characteristic comparisons
- intention to reenlist
- military/civilian compensation comparisons
- importance of the military mission

Analysis

- log-linear modeling

Findings:

- o Enlisted intentions to enlist and reenlist were found to be related to numerous noneconomic factors.
- o Youth who report that their fathers are career members of the military are twice as likely to enlist.
- o Enlisted soldiers who view their military role in positive terms are more favorable toward reenlistment.
- o Blacks were more favorably inclined toward reenlistment; this is a reflection of both marketplace and normative factors.
- o Married junior enlistees show are more likely to be favorably inclined to reenlist, which is likely to be due to the higher favorability of married enlisted personnel toward the military.
- o One fifth of all 1976 Junior officers were the sons of long-term officers
- o The amount of interesting work perceived to be in the military was strongly related to intentions to stay in the military.
- o Junior Officers who entered with a college degree are less likely to express a preference to stay in the military.
- o The retention of Junior officers is relatively unaffected by economic factors of pay, benefits, and marketability.

Fredland, J. E., and Little, R. D. (1984). Education levels, aspirations, and expectations of military and civilian males aged 18 to 22. Armed Forces and Society, Vol. 10, No. 2.

Research Purpose:

- o Examine the differences servicemen and their non-service counterparts in terms of their educational levels and aspirations.
- o Assess the quality of those who serve in the military, and to determine the utility of post-service educational benefits as recruiting incentives.

Approach:

Data

- 1979 National Longitudinal Survey (NLS) Youth Cohort

Sample

- 1979 NLS - nationally representative sample of 6,398 males and females 14 to 22 years of age - sampling methodology not discussed.

Variables

- demographic characteristics.
- educational aspirations/expectations.
- military/civilian status.

Analysis

- frequencies means crosstabulations.

Findings:

- o Comparisons of educational levels across race and military status indicates that White servicemen are of slightly lower quality than their nonmilitary counterparts in general, and roughly equal when compared to those not in school or working.
- o Black and Hispanic servicemen are of significantly higher quality than their nonmilitary counterparts in all comparisons.

- o Comparisons of educational aspirations across race and military status indicate that servicemen have higher educational aspirations than those not in the military.
- o Comparisons of educational expectations indicate that servicemen also expect complete a higher level of education than their nonmilitary counterparts expect to complete.
- o By branch of service, the Army has a lower percentage of servicemen who have completed their high school diploma, followed by the Navy and the Air Force. (Marines were not included in the analysis due to small sample size.)
- o The same ordering appears for educational aspirations and expectations.
- o Servicemen are of comparable quality to the non-military population when considering education level, and when comparing educational aspirations and expectations, servicemen are of higher quality.
- o Given the high quality of the existing force in terms of educational attainment, the GI Bill could be a powerful tool for recruiting.

Gade, P. A., and Elig, T. W. (1986). Enlisting in the U.S. Army: The citizen soldier in an all-volunteer force. ARI-PUTA, Working Paper 86-18. Paper presented at the Eleventh World Congress of Sociology, New Delhi, India.

Research Purpose:

- o Investigate Moskos' citizen soldier concept
- o Extend the understanding of the enlistment decision process
- o Compare the enlistment motivations of individuals attracted to the 2 year enlistment term option with those indifferent to option

Approach:

Data

- 1983 Survey of High School Seniors (SHSS)
- 1982, 1983, 1984, and 1985 New Recruit Surveys (NRS)

Sample

- 1983 SHSS - 1329 male and female high school students selected by school principals - analysis considered male seniors exclusively (N = 705)
- NRS 1982 - new Army recruits survey at eight Reception Stations during the early spring and summer months - the analysis presented in this paper used only male non-prior service Regular Army recruits (N = 6318)
- NRS 1983 - new Army recruits survey at eight Reception Stations during the early spring and summer months - the analysis presented in this paper used only male non-prior service Regular Army recruits (N = 8605)
- NRS 1984 - new Army recruits survey at eight Reception Stations during the early spring and summer months - the analysis presented in this paper used only male non-prior service Regular Army recruits (N = 6184)
- NRS 1985 - new Army recruits survey at eight Reception Stations during the early spring and summer months - the analysis presented in this paper used only male non-prior service Regular Army recruits (N = 7220)

Variables

- SHSS

- demographics
- reasons to consider or not consider enlistment
- recall of Army advertising and promotional activities
- preferences for various Army occupational specialties

- NRS

- AFQT
- educational level
- term of enlistment
- importance of reasons for enlistment
- post-service plans
- importance of enlistment options (2 year enlistment term and Army College Fund)
- importance of influencers on enlistment decision (parents, guidance counselors, and friends)

Analysis

- frequencies, crosstabulations, and principle components analysis of reasons to enlist in the Army

Findings:

o Citizen soldier

- defined as high school seniors interested in 2 year enlistment term and enlistees with 2 year terms
- citizen soldiers expressed a greater interest in obtaining money for eventual college attendance

o Enlistment motivations

- four latent motives identified
 - self development
 - education and training benefits
 - patriotism
 - escape from civilian problems (unemployment)
- primary enlistment motives vary by AFQT group
 - higher AFQT - education and training
 - lower AFQT - escape from civilian problems

o Influencers

- parents, guidance counselors, and friends all significantly influence enlistment decisions
- parents are: (1) the most important influence and (2) considered a good source of information by youth

Gade, P. A., Elig, T. W., Nogami, G. Y., Hertzbach, A., Weltin, M., and Johnson, R. M. Motives, incentives, and key influencers for enlistment, reenlistment, and attrition in the U.S. Army. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Research Purpose:

- o Describe the processes and influences surrounding:
 - enlistment decisions
 - reenlistment decisions
 - decisions to separate from the Army

Approach:

Data

- 1983 Survey of High School Seniors (SHSS)
- 1982 and 1983 New Recruit Surveys (NRS)
- 1983 Exit Survey

Samples

- 1983 SHSS - 1329 male and female high school students selected by school principals - analysis considered male seniors exclusively (N = 705)
- NRS 1982 - new Army recruits survey at eight Reception Stations during the early spring and summer months - the analysis presented in this paper used only male non-prior service Regular Army recruits (N = 6318)
- NRS 1983 - new Army recruits survey at eight Reception Stations during the early spring and summer months - the analysis presented in this paper used only male non-prior service Regular Army recruits (N = 8605)

- 1983 Exit Survey - Surveys administered during September through December to all enlisted personnel separating from the Army - analyses performed on 1857 normal discharges (ETS), 249 trainee discharges (TDR), and 505 adverse discharges

Variables

- SHSS
 - demographics
 - reasons to consider or not consider enlistment
 - recall of Army advertising and promotional activities
 - preferences for various Army occupational specialties
- NRS
 - AFQT
 - educational level
 - term of enlistment
 - importance of reasons for enlistment
 - post-service plans
 - importance of enlistment options (2 year enlistment term and Army College Fund)
 - importance of influencers on enlistment decision (parents, guidance counselors, and friends)
- Exit Survey
 - demographics
 - attitudes toward Army job
 - off-duty activities
 - MOS characteristics
 - reasons for leaving
 - reenlistment factors
 - ratings of retirement and other Army benefits

Analysis

- frequencies and crosstabulations

Findings:

- o Citizen soldier
 - defined as high school seniors interested in 2 year enlistment term and enlistees with 2 year terms
 - citizen soldiers expressed a greater interest in obtaining money for eventual college attendance
- o Enlistment motivations
 - four latent motives identified
 - self development
 - education and training benefits
 - patriotism
 - escape from civilian problems (unemployment)
 - primary enlistment motives vary by AFQT group
 - higher AFQT - education and training
 - lower AFQT - escape from civilian problems
- o Influencers
 - parents, guidance counselors, and friends all significantly influence enlistment decisions
 - parents are: (1) the most important influence and (2) considered a good source of information
- o Reasons for leaving the military
 - only females reported sexual harassment
 - most common reasons reported by males and females were:
 - skills acquired in military jobs allows good entry into civilian jobs
 - want to pursue education
 - poor NCO leadership
 - not being able to better oneself as expected

Hertzbach, A., Johnson, R. M., and Elig, T. W. (1983). Recognition of Army advertising themes by Army Reserve recruits in 1982. ARI-PUTA Working Paper 83-6. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Research Purpose:

- o Summarize the recall and response of new Army Reserve recruits to Army recruiting advertising

Approach:

Data

- 1982 New Recruit Survey (NRS)

Sample

- NRS 1982 - new Army recruits survey at eight Reception Stations during the early spring and summer months - the analysis presented in this paper used only male non-prior service Regular Army recruits (N = 6318)

Variables

- educational level
- age
- ethnicity
- AFQT
- enlistment motivations
- media habits
- advertising recall
- recruiting region
- MOS/CMF

Analysis

- frequencies and crosstabulations

Findings:

- o Not discussed - tables presented following material documenting the data

Horne, D. K., and Weltin, M. M. (1986). Motivation and career intentions.
Journal of Behavioral Economics, Fall, 29-42.

Research Purpose:

- o Develop an occupational decision model which incorporates ability measures and some attitudinal variables.
- o Combine economic theories of human capital with sociological variables related to institutional values.

Approach:

Data

- 1983 Army Recruit Survey for spring and summer 1983.

Sample

- 8,605 non-prior service recruits from all the U.S. reception stations across the U.S.

Variables

- AFQT score (ability)
- household income
- difficulty of getting job in hometown
- mother's education
- respondent's education
- race
- sex
- age
- 4 factor variables:
 - institutional
 - time-out
 - deferred gain
 - immediate gain

Analysis

- maximum likelihood factor analysis was used to derive 4 factors from 15 reasons for enlisting, then multinomial logic regression was used to test the hypothesis of whether there is any systematic difference in motives between career and citizen soldiers.

Findings:

- o Factor analysis generated 4 enlistment motivation of actors:
 - institutional: representing nonpecuniary military service-specific characteristics.
 - time-out: representing a desire for a time-out in career pursuits or need to escape some hardship in civilian life.
 - deferred gain: an investment in human capital.
 - immediate gain: to make immediate income and avoid unemployment.
- o Regression results showed:
 - that all factors, except immediate gain, to be statistically significant (immediate gain had correct sign).
 - ability, education, age, sex, and race are significant determinants of Army career intentions.
 - those recruits with lowest opportunity cost of remaining in Army and with a greater taste for institution of Army are most likely to plan Army careers.

Hosek, J. R. and Peterson, C. E. (1983). The AFEEES-NLS database: A choice-based sample for studying enlistment and post-enlistment outcomes (N-1930-MRAL). Santa Monica, CA: The Rand Corporation.

Research Purpose:

- o Create a microdatabase suitable for enlistment decision modeling containing both enlistees and members of the general civilian youth population
- o Create a database that will support manpower policy research

Approach:

Data

- enlistees - spring wave of the 1979 DoD Survey of Personnel Entering Military Service (1979) AFEEES Survey
- civilians - first wave of the National Longitudinal Survey of Labor Force Behavior, Youth Survey (1979 NLS)

Sample

- enlistees - complete enumeration
- civilians - stratified random sample of youth 14 to 22 in 1979

Variables

- demographic characteristics
- education and employment histories
- geographical indicators
- MEPCOM DEP/Accession Data (enlistees only)
- recruiter density/high school population
- county employment by industry

Analysis

none - article details database construction

Johnson, R. M. (1983). Modeling the individual enlistment decision. ARI-PUTA working paper 83-29. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Research Purpose:

- o Review psychological decision making theories
- o Evaluate how theories may contribute to an understanding of the enlistment decision process

Approach:

- o Review theoretical literature and research reports on the enlistment decision
- o Summarize decision making theories within the context of the enlistment decision
- o Note lessons learned in the modeling of the enlistment decision

Findings:

- o Regression models
 - aggregate-level theory of enlistment behavior
 - predicts number of enlistees based upon external factors (i.e., not a psychological theory)
- o Decision and expectancy theory models
 - explicitly psychological in orientation
 - common feature of models is decision based on perceived maximization of benefit among competing alternatives
 - ultimate decision is not focus of models
 - to influence decision must understand structure of perceptions and acceptable psychological trade-offs

- o Information integrative theories
 - impose no a priori model on decision process
 - uses empirical behavior to infer decision process
 - modeling of behavior allows inferring importance of perceptions and influences as well as identification of acceptable trade-offs
- o Lessons/recommendations
 - future research should systematically explore a variety of decision models
 - the study of the enlistment decision should adopt an explicitly longitudinal perspective--repeated surveys of individuals

Kaplan, R. L. and Harris, P. T. (1983). The measurement of high school students' attitudes toward recruiting incentives USAREC SR 83-1.

Research Purpose:

- o Determine the attitudes of high school students toward recruiting incentives.
- o Examine the relative impact of different recruiting packages on different demographic groups and quality categories.

Approach:

Data

- 1983 Survey of High School Students

Sample

- two-stage nationally representative sample of 5650 high school students
 - first stage selected high school for participation
 - second stage selected high school students

Variables

- demographic characteristics
- attitudes toward reasons for enlisting
- attitudes toward enlistment incentives
- AFQT equivalence scores
- participation in aptitude testing

Analysis

- frequencies, crosstabulations, magnitude estimation

Findings:

- o Financial assistance for education is of primary interest to mental category I and II students, followed by work experience that would be useful in civilian life.
- o Recruiting incentives related to economic security are rated highly for categories I and II, and very highly for categories IIIa through IVa.
- o Personal challenge, friends will join the Army, service in combat units, and lack of civilian jobs are relatively unimportant reasons to enlist.
- o Shorter periods of enlistment are more attractive to category I and II students.
- o Mental category IIIa through IVa students are more attracted to enlistment bonuses than to educational assistance packages.

Kriner, R. E., Orend, R. J., and Rigg, L. S. (1975) A further examination of enlistment motivation and the disposition of Army applicants. Humro Technical Report 75-15. Alexandria, VA: U.S. Research Institute for the Behavioral and Social Sciences.

Research Purpose:

- o Examine enlistment motivations in draft (1972) and volunteer (1974) environments
- o Determine reasons leading to the enlistment decision
- o Isolate factors that lead initial Army applicants to enlist in other services

Approach:

Data

- 1972 and 1974 Armed Forces Examination and Entrance Station (AFEES) Surveys

Samples

- 1972 sample not discussed
- 1974 survey administered between April and December of 1983 to 28,079 military enlistees (11,502 Army enlistees)

Variables

- demographic characteristics
- reasons for enlistment
- factors influencing enlistment
- reasons for selecting particular military service
- factors affecting selection of military service

Analysis

- frequencies, crosstabulations, and factor analysis

Findings:

- o Proportion of Army enlistees who initially preferred another service increased 8% between 1972 and 1974
- o The Army gained in the level of recruit educational attainment but declined in average recruit mental quality over the survey period
- o The main attraction of the Army is its perceived ability to provide skill training to enlistees
- o Age, geographic region, and educational level were the most important factors associated with making the Army an enlistee's first choice of service

Manigart, P. and Prensky, D. (1982). Recruitment and retention of volunteers: Problems in the Belgian Armed Forces. Armed Forces and Society, Vol. 9, No. 1, 98-114.

Research Purpose:

- o Examine enlistment motivations, specifically evaluating institutional and occupational motivations.
- o Evaluate the similarities between motivations to enlist and motivations to make the military a career.

Approach:

Data

- 1980 Survey of Belgian Army, Navy, and Air Force personnel.

Samples

- simple stratified probability samples drawn for the Air Force and Navy - two-stage stratified sample drawn for Army personnel- total sample size 2508.

Variables

- demographic characteristics.
- reasons for enlistment.
- influence of conscription on enlistment.
- career intentions.

Analysis

- frequencies, factor analysis, logistic regression.

Findings:

- o Six underlying constructs were identified from the factor analysis: calling (service to country, patriotism, taste for military environment) personal hedonism (need for change, travel), Careerism (career opportunities in military, job stability), training and educational opportunities, influence of unemployment, and escapism (to leave personal problems behind). Of these factors, three had eigenvalues greater than 1.0 (calling, 3.6; Personal Hedonism, 1.8; Careerism, 1.2).
- o Calling is negatively correlated with unemployment and educational opportunities (-.17, -.12), and positively correlated with careerism (.36). This indicates that the occupational dimension combines a career orientation with a non-career orientation.
- o Among the six motivational factors, calling and careerism had the highest impact (both positive) on plans to make the military a career. Among other demographic variables, age, rank, and marital status (married) had positive coefficients with significant Chi Squared probabilities.

Moskos, C. (1977). From institution to occupation: Trends in military organization. Armed Forces and Society, Vol. 4, No. 1.

Research Purpose:

- o Apply a developmental analysis to the Armed Forces in order to predict the Armed Forces structure in the future.
- o Compare two models of the military social organization: occupational and institutional.

Approach:

- o The history of the military as a social organization is discussed, from pre-1967, through the Gates Commission Report in 1970 through the institution of the All-Volunteer force in 1973.

Findings:

- o Prior to 1970, the military existed as an institution. In 1967, military pay was formally linked to civilian pay, and in 1970, the Gates commission recommended the institution of the All-Volunteer Force, with pay linked to and competing with the civilian labor force.
- o The movement toward occupational rather than institutional organization is seen in the proposals to reduce or eliminate a number of military benefits, the increasing class and racial representativeness of the armed forces, the separation of work and residence locations (enlisted personnel living off-base), high rates of desertion and attrition, and the increasing tendency of active-duty personnel to bring grievances into litigation.
- o Trends predicted by the movement toward an occupational model of social organization include the civilianization of activities that were formerly performed only by military personnel, and trade unionism.

Moskos, G. (1978). The emergent military: Calling, profession, or occupation? The Challenging World of the American Military. Boulder, CO: Westview.

Research Purpose:

- o Apply a developmental analysis to the Armed Forces in order to predict the Armed Forces structure in the future.
- o Compare three models of the military social organization, calling, profession, and occupation.

Approach:

- o The history of the military as an social organization is discussed, from pre-1967, through the Gates Commission Report in 1970 through the institution of the All-Volunteer force in 1973.

Findings:

- o Prior to 1970, the military existed as an institution. In 1967, military pay was formally linked to civilian pay, and in 1970, the Gates commission recommended the institution of the All-Volunteer Force, with pay linked to and competing with the civilian labor force.
- o Military social organization as a calling is associated with a purpose transcending individual self-interest in favor of a presumed higher good. A professional orientation is expressed in terms of specialized expertise arising from long intensive academic training. An occupational orientation is expressed in terms of monetary rewards for equivalent competencies.
- o The movement toward occupational rather than institutional organization is seen in the proposals to reduce or eliminate a number of military benefits, the increasing class and racial representativeness of the armed forces, the separation of work and residence locations (enlisted personnel living off-base) high rates of desertion and attrition, and the increasing tendency of active-duty personnel to bring grievances into litigation.
- o Trends predicted by the movement toward an occupational model of social organization include the civilianization of activities that were formerly performed only by military personnel, and trade unionism.

Moskos, C. and Faris, J. H. (1982). Beyond the marketplace: National service and the AVF. In Goodpaster, A.J., and Elliott, L.H. (eds.) Toward a Consensus on Military Service : Report of the Atlantic Council's Working Group on Military Services. N.Y.: Pergamon Press.

Research Purpose:

- o Compare two models of the military social organization: occupational and institutional.
- o Assess the impact of recent moves toward occupational manpower policies on military effectiveness and long-term organizational change.

Approach:

Literature Review

- review of literature and research reports studying the all-volunteer force (AVF)

Data

- official government reports (Department of Justice, Bureau of Justice Statistics - Congressional Budget Office, Department of Defense publications)

Variables

- demographic composition of AVF recruits
- enlistment, reenlistment, and attrition rates
- cost of G.I. Bill
- costs of National Service

Findings:

- o The movement toward occupational rather than institutional organization is seen in the social composition of Recruits to the AVF.
- o The active-duty Army contains a lower proportion of middle-class, college-oriented males than the active duty Army of the pre-AVF era.
- o The AVF force is subject to much higher attrition rates, which is attributed to the shifting social composition of the recruits.
- o Occupational policies promote recruitment of a force with unrealistic expectations, and once in the Army, occupational policies fail to foster unit cohesion.
- o Work and residence separation has increased greatly due to larger proportions of married junior enlistees, and pay raises which enable enlistees to afford to live in the civilian economy.
- o These factors have led to a belief among officers that civilians do not have sufficient respect for the military, and a dissatisfaction among those in the career force with the quality of junior enlisted personnel.
- o Disaffection among the current enlisted force is nearly as high as World War II prisoners of war. These factors raise questions regarding the potential effectiveness of the Army fighting force in the event of hostilities.
- o Long-term organizational adaptation can be supported by a revitalization of the citizenship aspect of military service.
- o Organizational adaptation to current conditions should go beyond the econometric labor market perspective of filling empty spaces to an emphasis on enabling youth to serve their country--a non monetary perspective.

- o Solutions include the provision of a GI Bill providing educational benefits similar to the Post-World War II GI Bill. A generous GI Bill could be provided as a substitute for existing enlistment bonuses.
- o Another solution includes the recognition of the motivational differences between the career soldier and the citizen-soldier. The military should establish a two-track system. A four year initial commitment, improved benefits, and reenlistment bonuses should be provided to career soldiers in order to reduce attrition. Educational benefits, reduced pay and benefits, (in order to reduce off-base living and increase unit cohesion), a shorter term of duty, and assignment to labor intensive tasks should be provided to the citizen-soldier. The additional educational benefits should attract more upwardly mobile youths.
- o Changes in the military should be accompanied by a corresponding institution of civilian national service. All government financial aid should be tied to national service. In order to be eligible for financial aid, youth must serve for a short period of time in some form of social service.

Orvis, B. R. (1982). Forecasting enlistment actions from intention information: Validity and improvement (N-1954-MRAL). Santa Monica, CA: The Rand Corporation.

Research Purpose:

- o Investigate the relationship between survey enlistment intention measures and subsequent enlistment behaviors
- o Compare the usefulness of several intention measures

Approach:

Data

- 1981 Applicant Survey
- Youth Attitude Tracking Studies (YATS)
- extracts from the AFES Reporting system

Sample

- 1981 Applicant Survey - Sample of 3500 males taking Armed Services Vocational Aptitude Battery (ASVAB) in April, 1981.
- YATS - 10 semi-annual waves (spring 1976 through fall 1980) of nationally representative sample of males 16 to 21 years of age - sample size approximately 3500 each wave

Variables

- educational level and aspirations
- parent's education
- demographic characteristics
- enlistment intention
 - aided and unaided
 - general and specific
- quality (high school diploma status plus score on ASVAB)

Analysis

- frequencies, crosstabulations, projected enlistments

Findings:

- o One-half of respondents ever enlisting did within 12-18 months of being surveyed
- o Relationship among quality, intention, and enlistment complex
 - high quality youth intending to enlist are more likely to enlist than low quality youth with positive intention
 - if unqualified low quality youth are excluded from comparison, high and low quality youth with positive intention enlist at same rates
- o Intention is a good indicator of eventual enlistment behavior
 - composite intention measure is best at tracking behavior

Orvis, B. R. and Gahart, M. T. (1985). Relationship of enlistment intention and market survey information to enlistment in active duty military service (N-2292-MIL). Santa Monica, CA: The Rand Corporation.

Research Purpose:

- o Investigate relationship between survey enlistment intentions measures and subsequent enlistment decisions of non-prior service (NPS) males
- o Develop quality index for youth not taking the Armed Services Vocational Aptitude Battery (ASVAB)
- o Determine whether intention predicts first-term performance

Approach:

Data

- Youth Attitude Tracking Study (YATS)
- 1979 - 1982 National Longitudinal Survey (NLS) - Youth Survey
- Defense Manpower Data Center (DMDC) personnel records
- published Bureau of Labor Statistics reports

Sample

- 13 YATS administrations (spring 1976 through fall 1983) to nationally representative sample of non-prior service (NPS) males 16 to 21 years of age - approximately 5000 - 5500 each administration
- 4 NLS administrations (1979 through 1983) to 3700 nationally representative NPS males 16 to 21 years of age

Variables

- age
- educational level and aspirations
- parent's education
- demographic characteristics
- regional economic conditions
- regional recruiting resource expenditure
- regional aggregate enlistments
- enlistment intention
 - aided and unaided
 - general and specific
- enlistment behavior
- first-term performance (promotion - attrition)

Analysis

- frequencies, crosstabulations, regressions

Findings:

- o Intentions affect enlistments even following the statistical removal of effects due to demographic characteristics
- o Majority of enlistments from the negative intention group
- o Eventual enlistees demographically different in high school than eventual nonenlistees
 - more minorities
 - working or looking for work
 - consider military service to be a secure job
 - take few mathematics courses
- o Intention and first-term performance

- no effect on promotion
- positive intention group has lower attrition rate
- o Performance of new quality measure
 - 70 - 75% correct in assigning individuals to high (I-IIIa) or low (III-IV) quality groups

Pinch, F. C. (1982). Military manpower and social change: Assessing the institutional fit. Armed Forces and Society, Vol. 8, No. 4, 575-600.

Research Purpose:

- o Examine the degree to which features of the military institution that affect recruitment, training, and career development articulate with recent societal trends in those areas.

Approach:

- o The enumeration and examination of recent trends in Canadian and United States societies. Examinations rely on recent literature.

Findings:

- o The military has done poorly in adapting the AVF and the modern military to societal trends in education, the civilian labor force, and career development.
- o In recent years, the AVF has recruited and allocated increasing numbers of unskilled manpower without high school degrees or technical skills despite a trend toward increasing percentages of the population with high school degrees. Participation rates in vocational/technical programs has increased greatly, however, the military has relied upon vocational technical training within the military system rather than recruiting those skills from the labor market.
- o The military institution has failed to track with trends in the civilian labor force in terms of demographic trends, increasing women's participation in the labor force, and family employment patterns.
- o The size of the recruiting pool aged 17 to 24 years old has decreased while the 25 to 44 year old age group will increase. The military maintains built-in restrictions on upper levels of age and experience despite these trends.
- o Women's participation in the labor force is predicted to reach men's participation, and the technical qualifications of younger females will surpass those of males in the next decade.. However, the military does not currently draw proportionately from this labor pool.

- o Dual career and single parent employment have emerged as distinct family employment patterns. These trends are reflected in the composition of the military, however the military has no commitment to the needs of the military family such as adequate housing, day care facilities, and the consideration of the military family in the formulation of personnel policy.
- o The reliance on technical skills has increased, both in the military and in the civilian economy. The military continues to train skilled technicians and craftsmen internally rather than rely on the civilian labor pool despite the fact that the civilian sector trains in those areas for half the cost.
- o The military operates as a closed personnel system, that is with the new accessions entering at the bottom of the system. The traditional reward structure rewards increasing competence with increasing pay and rank. However this distorts the pay and salary structure, as new ranks must be added to the system. A horizontal entry system, resembling a short term contractual agreement should be developed.

Pliske, R. M., and Adelman, L. (1985). Development of tools for the measurement of enlistment decision variables. ARI-PUTA working paper 85-14. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Research Purpose:

- o Development of survey measurement instruments designed to measure trade-offs made among factors influencing the enlistment decision
- o To explicitly incorporate both pecuniary and nonpecuniary factors in the measurement instruments

Approach:

Literature review

- reviewed behavioral decision making literature

Data

- surveys administered to new Army recruits

Sample

- 300 new recruits were surveyed at Receptions Stations during October, 1984

Variables

- subjective ratings (dividing 100 importance points among six factors influencing enlistment)
- relative rankings (rank ordering of six factors affecting enlistment)
- recruitment package ratings (rating the desirability of 35 recruitment packages on a Likert scale)

Analysis

- frequencies, crosstabulations, individual-level regressions, analysis of variance, cross-instrument prediction comparisons

Findings:

- o Review of existing literature and research suggested the use of six factors (pecuniary and nonpecuniary) in assessing influences on the enlistment decision process
- o Respondents felt that the rating of recruitment packages allowed them to express their preferences best
- o All three measurement instruments were in general agreement regarding preferential predictions
- o Future research should incorporate a variety of trade-off instruments for modeling the enlistment decision (nonlinear models should be considered as well)

Pliske, R. M., Elig, T. W., and Johnson, R. M. (1986). Towards an understanding of Army enlistment motivation patterns. Technical report 702. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Research Purpose:

- o Summarize enlistment motivations
- o Summarize changes in enlistment motivations between 1982 and 1983 - additional comparisons made with 1979 DoD Survey

Approach:

Data

- 1982 and 1983 New Recruit Surveys (NRS)
- 1979 DoD Survey

Samples

- 1979 DoD - not documented
- NRS 1982 - total of 12,000 new Army recruits surveyed at eight Reception Stations during the early spring and summer months
- NRS 1983 - total of 15,000 new Army recruits surveyed at eight Reception Stations during the early spring and summer months

Variables

- importance of reason for enlisting
- AFQT
- gender
- educational attainment
- preenlistment employment status
- post-service plans

Analysis

- crosstabulations and principle components analysis (first and second order)

Findings:

- o Changes in reasons for enlistment from 1979 to 1982
 - decreased percentages reporting chance to better myself and skill training as motivations for enlistment
 - increased percentages reporting money for college and escape from unemployment as motivations for enlistment
- o Changes in reasons for enlistment from 1982 to 1983
 - decreasing percentage reporting chance to better myself and skill training as motivations for enlistment
 - increasing percentage reporting chance to earn more money as an enlistment motivation
- o Enlistment reasons varied according to AFQT, educational attainment, and gender categories
 - higher AFQT recruits more motivated by money for college
 - lower AFQT recruits more motivated by desire to escape unemployment
 - more educated recruits less likely to report service to country as a reason for enlistment
 - females more interested in improving self while males more often cited service to country and unemployment as reasons to enlist

- o Six latent reasons for enlistment identified
 - self-improvement
 - economic advancement
 - characteristics of military service (benefits, to be a soldier, serve country)
 - take time out
 - travel
 - earn money for education

Segal, D. R., Blair, J. D., Lengermann, J. J., and Thompson, R. C.
Institutional and occupational values in the U.S. military. In
Margiotta, et al., (eds.) Changing U.S. Military Realities.

Research Purpose:

- o Identify linkages among four themes used to describe structural changes in military organizations:
 - Decline of the citizen-soldier;
 - Convergence of military and civilian institutions;
 - Industrialization of the military organization; and,
 - Structural pluralism within the military.

Approach:

Data

- 1975 Survey of Army Personnel (SAP)

Sample

- 1975 SAP - Sample of 2286 Army personnel - analyses presented in paper included only male enlisted personnel (N=968) and officers (N=56) with four or fewer years of service

Variables

- demographic characteristics
- MOS
- career orientation
- reenlistment plans
- index of institutional orientation
- index of occupational orientation

Analysis

- frequencies, correlations, scale means, factor analysis.

Findings:

- o The factor analysis suggests three factors, job-related reasons for enlisting, general orientation toward the ideal occupation, and a sense of calling.
- o Comparison of scores reflecting institutional orientations reveal no difference between combat and non-combat units.
- o Comparisons of institutional and occupational dimension scores reveal significant differences by rank.
- o Officers view occupational dimensions more favorably than do enlisted persons.
- o Career men were institutionally oriented and occupationally oriented, while non-career men who were institutionally oriented were not occupationally oriented. Therefore, occupational and institutional orientations are not opposite ends of the same continuum.

Weltin, M. M., Elig, T. W., Johnson, R. M., and Hertzbach, A. (1984).
Attitudes of high school seniors toward military enlistment. ARI-PUTA
working paper 84-24. Alexandria, VA: U.S. Army Research Institute for
the Behavioral and Social Sciences.

Research Purpose:

- o Obtain current information regarding career choices of high school seniors
- o Identify factors important to high school seniors when considering career choices
- o Help Recruiting Command target advertising appeals

Approach:

Data

- survey of high school students

Sample

- national sample of 708 male and 541 female high school students
- two-stage sample drawn
 - first stage selection of schools
 - second stage selection of respondents performed by high school principals

Variables

- demographic characteristics
- reasons for/against enlistment
- attitudes toward enlistment incentives
- attitudes toward military occupations
- academic aptitude
- impact of Army advertising and promotions

Analysis

- frequencies, crosstabulations, principle components analysis, canonical discriminant function analysis

Findings:

- o Primary incentives for enlistment
 - chance to better myself
 - educational opportunities
 - escaping economic hardship
 - patriotism
- o Barriers to enlistment
 - pay less than civilian employment
 - lack of available skill training
 - waste of time
 - poor treatment in military
- o Characteristics most important in job
 - salary
 - satisfaction with work

REFERENCES

- Bachman, J. G. (1983). American high school seniors view the military: 1976 - 1982. Armed Forces and Society, Vol. 10, No. 1, 86-104.
- Benchoff, D. L. (1983). Analysis of the recruiting incentives survey. Carlisle Barracks, PA: U.S. Army War College.
- Binkin, M. (1975). The military pay muddle. Washington, DC: The Brookings Institution.
- Brown, C. (1985). Military enlistments: What can we learn from geographic variation? American Economic Review, Vol. 75, No. 1, 228-234.
- Burk, J.S. & Faris, J.H. (1982). The persistence and importance of patriotism in the all-volunteer force. (USAREC SR 82-6) Battelle Memorial Institute.
- Chisholm, R.F., Gauntner, D.E. (1980). Pre-enlistment expectations, perceptions of Army life, satisfaction, and re-enlistment of volunteers. Journal of Political and Military Sociology, Vol. 8, No. 1.
- Cooper, R. V. L. (1977). Military manpower and the all-volunteer force. Santa Monica, CA: Rand.
- Cotton, C. (1981). Institutional and occupational values in Canada's Army. Armed Forces and Society, Vol. 8, No. 1, 99-110.
- Dale, C. (1984). Army recruiting in a turbulent labor market. In Proceedings of the Industrial Relations Research Association. Dallas, TX, 295-301.
- Dale, C., & Gilroy, C. (1985). Enlistments in the all-volunteer force: Note. The American Economic Review, Vol. 75, No. 3, 547-551. ADA 146-235
- Dale, C., & Gilroy, C. (1983). The economic determinants of military enlistment rates. ARI Technical Report 587, Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Dale, C. & Gilroy, C. (1984). Determinants of enlistments: A macroeconomic time series view. Armed Forces & Society, Vol. 10, No. 2, Winter 1984, 192-210.
- Dale, C. & Gilroy, C. (1985). The outlook for Army recruiting. Eastern Economic Journal, Vol. 11, No. 2, 107-122.
- Daula, T. V. & Smith, D. A. (1986). Recruiting goals, enlistment supply, and enlistments in the U.S. Army. In C. L. Gilroy (ed.), Army Manpower Economics. Boulder: Westview Press, Inc.

- Elig, T. W., Kass, R., Gade, P. A., & Eaton, N. K. (1981). Demographic similarity of buyers and sellers: Sales productivity of Army recruiters. Paper presented at the American Psychological Association, Los Angeles, CA.
- Elig, T. W., Johnson, R. M., Gade, P. A., & Hertzbach, A. (1984). The Army enlistment decision: An overview of ARI recruit surveys, 1982 and 1983. ARI-PUTA working paper, 84-12. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Faris, J. H. (1981). The all-volunteer force: Recruitment from military families. Armed Forces and Society, Vol. 7, No. 4.
- Faris, J. H. (1984). Economic and noneconomic factors of personnel recruitment and retention in the AVF. Armed Forces and Society, Vol. 10, No. 2.
- Fechter, A. E. (1978). The supply of enlisted volunteers in the post-draft experiment: An evaluation based on pre-1972 experience. In Defense Manpower Policy, R. V. L. Cooper ed., Santa Monica, CA: Rand Corporation, 87-99.
- Fredland, J. E. & Little, R. D. (1984). Education levels, aspirations, and expectations of military and civilian males aged 18 to 22. Armed Forces and Society, Vol. 10, No. 2.
- Gade, P. A. & Elig, T. W. (1986). Enlisting in the U.S. Army: The citizen soldier in an all-volunteer force. ARI-PUTA, Working Paper 86-18. Paper presented at the Eleventh World Congress of Sociology, New Delhi, India.
- Gade, P. A., Elig, T. W., Nogami, G. Y., Hertzbach, A., Weltin, M., & Johnson, R. M. Motives, incentives, and key influencers for enlistment, reenlistment, and attrition in the U.S. Army. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Goldberg, L. & Greenston, P. (1986). Economic analysis of Army enlistments: Policy implications. In C. L. Gilroy (Ed.), Army Manpower Economics. Boulder: Westview Press, Inc.
- Hertzbach, A., Johnson, R. M., & Elig, T. W. (1983). Recognition of Army advertising themes by Army Reserve recruits in 1982. ARI-PUTA working paper 83-6. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Horne, D. K. (1985a). An economic analysis of Army enlistment supply. ARI Research Note 86-103. Alexandria, VA: Army Research Institute for the Behavioral and Social Sciences. ADA 176-201
- Horne, D. K. (1985b). Modeling Army enlistment supply for the all-volunteer force. Monthly Labor Review, Vol. 198, 35-41.

- Horne, D. K. & Weltin, M. M. (1986). Motivation and career intentions. Journal of Behavioral Economics, Fall, 29-42.
- Hosek, J. R. & Peterson, C. E. (1986). Enlistment decisions of young men. In C. L. Gilroy (Ed.), Army Manpower Economics. Boulder: Westview Press, Inc.
- Hosek, J. R. & Peterson, C. E. (1983). The AFEES-NLS database: A choice-based sample for studying enlistment and post-enlistment outcomes (N-1930-MRAL). Santa Monica, CA: The Rand Corporation.
- Hosek, J. R., Fernandez, R. L., & Grissmer, D. W. (1984). Active enlisted supply: Prospects and policy options (P6967). Santa Monica, CA: The Rand Corporation.
- Johnson, R. M. (1983). Modeling the individual enlistment decision. ARI-PUTA working paper 83-29. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Kaplan, R. L. & Harris, P. T. (1983). The measurement of high school students' attitudes toward recruiting incentives. USAREC SR 83-1.
- Kriner, R. E., Orend, R. J., & Rigg, L. S. (1975). A further examination of enlistment motivation and the disposition of Army applicants. HumRO Technical Report 75-15. Alexandria, VA
- Manigart, P. & Frensky, D. (1982). Recruitment and retention of volunteers: Problems in the Belgian Armed Forces. Armed Forces and Society, Vol. 9, No. 1, 98-114.
- Moskos, C. (1977). From institution to occupation: Trends in military organization. Armed Forces and Society, Vol. 4, No. 1.
- Moskos, C. (1978). The emergent military: Calling, profession, or occupation? The Challenging World of the American Military. Boulder, CO: Westview.
- Moskos, C. & Faris, J. H. (1982). Beyond the marketplace: National service and the AVF. In Goodpaster, A.J., and Elliott, L.H. (eds.) Toward a Consensus on Military Service: Report of the Atlantic Council's Working Group on Military Services. N.Y.: Pergamon Press.
- Orvis, B. R. (1982). Forecasting enlistment actions from intention information: Validity and improvement (N-1954-MRAL). Santa Monica, CA: The Rand Corporation.
- Orvis, B. R. & Gahart, M. T. (1985). Relationship of enlistment intention and market survey information to enlistment in active duty military service (N-2292-MIL). Santa Monica, CA: The Rand Corporation.

- Pinch, F. C. (1982). Military manpower and social change: Assessing the institutional fit. Armed Forces and Society, Vol. 8, No. 4.
- Pliske, R. M. & Adelman, L. (1985). Development of tools for the measurement of enlistment decision variables. ARI-PUTA working paper 85-14. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Pliske, R. M., Elig, T. W., & Johnson, R. M. (1986). Towards an understanding of Army enlistment motivation patterns. Technical report 702. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. ADA 173-817
- Schmitz, E.J., & Nelson, A. (1984). Modeling the enlistment process for personnel planning. ARI Research Report 1416. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. ADA 174-842
- Segal, D. R., Blair, J. D., Lengermann, J. J., & Thompson, R. C. Institutional and occupational values in the U.S. military. In Margiotta, et al. (eds.) Changing U.S. Military Realities.
- Thomas, G. (1983). Feasibility of modeling the supply of older age accessions. Washington, DC: U.S. Department of Education.
- Weltin, M. M., Elig, T. W., Johnson, R. M., & Hertzbach, A. (1984). Attitudes of high school seniors toward military enlistment. ARI-PUTA Working Paper 84-24. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.